

## REMARKS

### **Claims 1, 2, 4, 5, and 6 stand rejected over *Smyers, Jr. et al.* '596 under 35 U.S.C. 102(a).**

The Smyers patent does not relate to power driven nut runners or nut setters, but in contrast discloses a manual ratchet wrench. The gear shown in the artwork (24) is a ratchet mechanism intended to allow rotation of the stud (23) in one direction only. The driven gear of a nut runner or nut setter is different in many respects including shape, size and torque transmitting properties as well as in the friction reducing qualities employed in power torque controlled tools. The present invention endeavors to work with the specific requirements of nut runners and nut setters allowing the incorporation of a push button release mechanism with little or no affect on tool use, performance or torque capabilities. (See added claim 9)

Nut runner and nut setter heads are made as small as possible for access considerations. Common head sizes are less than  $\frac{3}{4}$  of an inch in diameter, which leaves little room for a socket release mechanism. A current design also incorporates a bore through the head to allow a modified Allen wrench to protrude through the square drive and into the fastener to provide anti-rotational backup during the torque operation. The present invention utilizes this same hole with minimal modifications to the tool in order to provide the push button socket release feature. A spring, sized appropriately, provides the push button return force only when the tool is idle, so little or no frictional force is transmitted between the nut runner rotational elements and its stationary housing during torque operations.

Claims 2, 4, and 5 depend from claim 1 and relate to power driven nut runner or nut setter structural combinations in contrast to the '596 mechanism.

### **Referring to claim 6**

None of the references of record include a method for truly locking the socket retention post in the outward position (see last 3 lines of claim 6). Each reference includes a spring mechanism that allows the pin to be forced inward, even when the button is not pushed. This dependence (directly on a spring) has proven unreliable in practice. The present invention uses a

cam at such an angle that the pin cannot be forced inward without the release button being pushed.

**Claim 7 stands rejected over Smyers, Jr. et al. in view of Herman et al.' 005.**

While *Herman* discloses a method for encapsulating an actuator, query how would *Smyers* be modified (the sliding shaft and pin structure moving perpendicular to each other...) to include the *Herman et al.* teachings?

**Claim 8 stands rejected over Smyers et. al. in view of Harper '638.**

The *Harper et. al.* device does not include a nut runner gear. The mating surfaces are splined in order to transmit the torque from the cylindrical body member to the gear member (as it is called out in the patent). There is no relative rotational motion between the elements, and thus it does not have the design requirements that a push button socket release mechanism would have in a nut runner or nut setter.

### **Summary**

The present invention is unique in that it allows actuation of the detent by means of the pushbutton only. The other references use spring force to keep the detent in the outward position when the socket is attached. In fact, the *Smyer's* patent specifically mentions that "The spring must be sufficiently resilient to allow deflection of the detent member in the event the user...attempt[s] to manually remove a socket from the stud." (Col. 3, lines 30-34)

The reference patent for "Conversion Device for Drills," '638, is not deemed relevant to the present invention. The '638 reference is a coupling or an adapter so one can take the ratchet head from a conventional hand ratchet wrench and hook it up to a drill motor. As one skilled in the art, it is not deemed obvious to take the *Smyer's* reference in view of *Harper* and incorporate it into a nutsetter that has a driver portion that is integral to the tool (and not just an add-on).

The present invention relates to an embodiment of a push button socket release into a power driven nut runner or nut setter. There are special design requirements for this application defined with increasing specificity in the present claims which are beyond those for a manual ratchet wrench or for a drill motor adapter. The references of record do not appear to address

those issues. As a consequence, it is believed this application contains allowable subject matter which Notice is respectfully solicited.

Respectfully submitted,

  
Conrad O. Gardner  
Registration No.: 22,462  
Telephone No.: (206) 655-5510

The Boeing Company  
P.O. Box 3707, M/S 11-XT  
Seattle, WA 98124-2207